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09/997,442

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02/09/2004

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EXAMINER

FLEURANTIN, JEAN B

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/997,442

Applicant(s)

TARENSKEEN ET AL.

Examiner

Jean B Fleurantin

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. This is in response to the application filed on November 29, 2001, in which claims 1-31 are presented for examination.

2. The document filed on December 18, 2001 (Paper No. 2) has been entered.

Drawings

3. The drawings filed on May 29, 2002 (Paper No. 3) are approved by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated in the "Notice of Draftsperson's Patent Drawing Review," PTO-948.

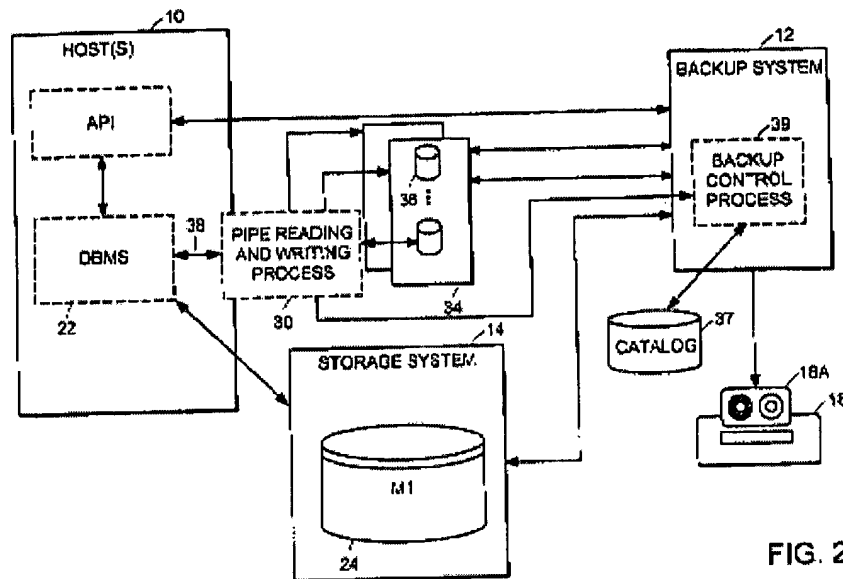
Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9-19, 26, 27, 29 and 30, as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,651,074 issued to Taylor ("hereinafter Taylor '074").



As per claim 1, Taylor '074 discloses a database system comprising:

“a storage subsystem (figure 2) to store a plurality of temporary tables”, (figure 1, elements 34, 36);

“an access management subsystem (figure 2, elements 22 and 30) adapted to receive, in parallel” (see figure 2), “groups of data from a source system (storage 14 of figure 2) for storage in corresponding temporary tables”, (figure 2, elements 34, 36);

“the access management subsystem (figure 2, elements 22 and 30) adapted to further insert data from the temporary tables (figure 2, elements 34, 36) “into the target table”, (figure 2, element 18.

Applicant is also referred to column 4, line 49 to column 5, line 10.

As per claim 2, Taylor '074 discloses, “wherein the access management system comprises plural access managers adapted to manage access of respective portions of the storage subsystem” as data availability has also been increased through the use of arrays of mirrored

databases, either single or multi-threaded, for multiple simultaneous access capabilities, (see col. 1, lines 31-33).

As per claim 3, Taylor '074 discloses, "wherein the temporary tables are defined according to definitions for a source table in the source system", (see figure 2, elements 34, 36).

As per claim 4, Taylor '074 discloses, "wherein the plural access managers are adapted to insert data from the temporary tables in parallel to the target table", (see figure 2, elements 34, 36 and 18).

As per claim 5, Taylor '074 discloses, "the storage subsystem to store the definitions for the source table copied from the source system" as a set of temporary data stores 34 built from raw storage resources 36, when a data store reaches capacity the intelligent process 30 signals the backup system 12 to begin a backup of that data store, (see col. 4, lines 54-57).

As per claim 6, Taylor '074 discloses, "wherein the plural access managers comprises access module processors, the storage subsystem divided into plural storage modules managed by respective access module processors", (see figure 2, elements 30 and 39).

As per claim 7, Taylor '074 discloses, "wherein the target table is distributed across the plural storage modules", (see figure 2, elements 18, 39 and 30).

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As per claim 9, Taylor '074 discloses, "wherein the access management subsystem has a configuration different from a configuration of an access management system in the source system" as database export command of a DBMS 22 is piped into an intelligent pipe reading process 30 and distributed over a set of temporary data stores 34 built from raw storage resources 36, (see col. 4, lines 52-55).

As per claim 10, Taylor '074 discloses a method of migrating data (see figure 2) to:

"archiving data from a source table in a source database system" as data storage system 14 of figure 2 being stored or archived;

"transferring groups of the archived data" (figure 2, element 38) in parallel (figure 2) to corresponding temporary tables (figure 2, elements 34, 36) in a target database system (figure 2, element 18);

"inserting data from the temporary tables" (figure 2, elements 34, 36) "into a target table in the target database system" (figure 2, element 18).

Applicant is also referred to column 4, line 49 to column 5, line 10.

As per claim 11, Taylor '074 discloses, "wherein archiving the data comprises archiving the data using a plurality of concurrently active archive modules" command executed by DBMS (22) in backup system 12, backup control process 39 works concurrently with DBMS (22), control 30 for determining when the data stream in data stores 34 is empty or full before beginning transferring of data into catalog 37 and tape device 18.

As per claim 12, Taylor '074 discloses, "wherein transferring the groups of data comprises restoring the groups of data, in parallel, using a plurality of restore modules" as an operator executes the appropriate command to restore a database. The archive utility as figure 2, elements (22, 30, 34 and 36).

As per claim 13, Taylor '074 discloses the method, "further comprising communicating the groups of data between respective pairs of archive modules and restore modules across a transfer medium" as an operator executes the appropriate command to restore a database. The archive utility as figure 2, elements (22, 30, 34 and 36).

As per claim 14, Taylor '074 discloses, "wherein communication across the transfer medium comprises communicating across a pipe defined by an operating system in one of the source database system and the target database system", as data stream 38 from a database export command of a DBMS 22 is piped into an intelligent pipe reading process 30 and distributed over a set of temporary data stores 34 built from raw storage resources 36, (see col. 4, lines 52-55; figure 2, elements 38, 30, 39 and 18).

As per claim 15, Taylor '074 discloses, "wherein communication across the transfer medium comprises communicating through an intermediate storage system" as data stream 38 from a database export command of a DBMS 22 is piped into an intelligent pipe reading process 30 and distributed over a set of temporary data stores 34 built from raw storage resources 36, (see col. 4, lines 52-55).

As per claim 16, Taylor '074 discloses the method, "further comprising storing the source table across plural access manager (see figure 2, elements 34, 36), each access manager managing access to respectively portions of the source table" as database export command of a DBMS 22 is piped into an intelligent pipe reading process 30 and distributed over a set of temporary data stores 34 built from raw storage resources 36, (see col. 4, lines 52-55).

As per claim 17, Taylor '074 discloses, "wherein transferring groups of the data comprises transferring clusters of the data, each cluster of data comprising data associated with a respective set of plural access managers" as data availability has also been increased through the use of arrays of mirrored databases, either single or multi-threaded, for multiple simultaneous access capabilities, (see col. 1, lines 31-33).

As per claim 18, Taylor '074 discloses the method, "further comprising copying database definitions from the source database system to the target database system", (see figure 2, elements 34, 36).

As per claim 19, Taylor '074 discloses the method, "further comprising creating temporary tables in the target database using the copied database definitions", (see figure 2, elements 34, 36).

As per claim 26, Taylor '074 discloses an article at least one storage medium containing instructions that when executed cause a target database (see figure 2) to:

“receive one or more queries to set up temporary tables in the target database system” as data storage system 14 of figure 2 being received data from the DBMS (22) of Host (10). It should be noted that data are comprised of queries.

“receive groups of the data from a source table in a source database into the temporary tables” (figure 2, elements 34, 36);

“inserting data from the temporary tables” (figure 2, elements 34, 36) “into a target table in the target database system” (figure 2, element 18).

Applicant is also referred to column 4, line 49 to column 5, line 10.

As per claim 27, Taylor '074 discloses, “wherein receiving the instructions when executed cause the target database system to create the temporary tables using definitions for the source table”, (see figure 2, elements 34, 36).

As per claim 29, Taylor '074 discloses, “wherein receiving the instructions when executed cause the target database system to receive the groups of data comprising clusters of data” as data availability has also been increased through the use of arrays of mirrored databases, either single or multi-threaded, for multiple simultaneous access capabilities, (see col. 1, lines 31-33).

As per claim 30, "wherein each cluster comprises data of plural access module processors in the source database system", (figure 2, elements 22 and 30).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,651,074 issued to Taylor ("hereinafter Taylor '074").

As per claim 20, Taylor '074 illustrates only a single source of table or database. The Examiner notes that Taylor has done so for only illustration purposes. It would have been obvious to one of ordinary skill in the art to note that a storage system may include one or more databases or data tables or second source tables. Moreover, it would have been obvious to one of ordinary skill in the art to note that the storage system of Taylor may be partitioned into a plurality of second sources. Thus, the step of archiving data from a second source table would have been obvious to one of ordinary skill in the art at the time the invention was made in order provide storage and migration of very large data or database system, thus making the system versatile.

The step of transferring data from a source table to a set of temporary table in a target database system has been discussed above in light of claim 10 above. Thus, transferring groups

of the archived data from the second source table in parallel to corresponding second set of temporary tables in the target database system would have been obvious to one of ordinary skill in the art at the time of the invention since there would exist a plurality of secondary tables as the step of transferring would have likewise been executed or performed as noted above.

As per claim 21, Taylor '074 discloses the method, "further comprising inserting data from the second set of temporary tables" (figure 2, elements 34, 36) "into a second target table in the target database system" (figure 2, element 18).

Applicant is also referred to column 4, line 49 to column 5, line 10.

As per claim 22, Taylor '074 discloses "a method of migrating data from a first source table in a first database system to a second database system" (see figure 2) and column 4, line 49 to column 5, line 10, comprising:

"receiving groups of data (figure 2, element 38) from the source table (figure 2, element 14) from an intermediate medium into corresponding temporary tables (figure 2, elements 34, 36) in the second database system" (figure 2, element 18),

"defining the temporary tables according to definitions of the source table" is not explicitly stated in Taylor. However, the temporary tables retaining the same names and format as the tables of the source tables is interpreted as the step of "defining the temporary tables according to definitions of the source table. It would have been obvious to one of ordinary skill in the art at the time the invention was made to define the temporary tables according to

definitions of the source table in order to provide consistency between the source tables and the target table thereby preventing alteration of the tables.

“inserting rows of the temporary tables into a target table in the second database system” (see figure 2, element 18). It should be noted that a table comprises rows and columns.

Applicant is also referred to column 4, line 49 to column 5, lines 10.

As per claim 23, Taylor ‘074 discloses, “wherein receiving the data comprises data from the group in parallel into the corresponding temporary tables”, (see figure 2, elements 34, 36 and 18).

As per claim 24, Taylor ‘074 discloses, “wherein receiving the data from the intermediate medium comprises receiving the data over a data network”, (see col. 2, lines 2-4).

As per claim 25, Taylor ‘074 discloses, “wherein receiving the data from the intermediate medium (figure 2, elements 12) comprises receiving the data from an intermediate storage (figure 2, element 14).

As per claim 31, Taylor ‘074 discloses “an article comprising at least one storage medium containing instructions for migrating data from first source table in a first database system to a second database system, the instructions when executed causing the second database system” (see figure 2), to:

“receiving, in parallel (figure 2) groups of data from the source table (figure 2, element 14) from an intermediate medium into corresponding temporary tables (figure 2, elements 34, 36) in the second database system (figure 2, element 18)” ,

“defining the temporary tables according to definitions of the sources table” is not explicitly stated in Taylor. However, the temporary tables retaining the same names and format as the tables of the source tables is interpreted as the step of “defining the temporary tables according to definitions of the source table. It would have been obvious to one of ordinary skill in the art at the time the invention was made to define the temporary tables according to definitions of the source table in order to provide consistency between the source tables and the target table thereby preventing alteration of the tables.

“inserting rows of the temporary tables, in parallel, into a target table in the second database system” (see figure 2, element 18). It should be noted that a table comprises rows and columns.

Applicant is also referred to column 4, line 49 to column 5, lines 10).

6. Claims 8 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,651,074 issued to Taylor (“hereinafter Taylor ‘074”) in view of Nathan Gurewich et al. – 1995 (“hereinafter Gurewich”).

As per claim 8, Taylor ‘074 does not explicitly specify the type of database used in their system such as the temporary tables are relational tables. However, a relational database is well known in the art. Such as a database provides a link between different tables or databases note

the pages 144-148 of Nathan Gurewich. Having a relational database in the system of Taylor would have been obvious to one of ordinary skill in the art in order to provide the capability to access and backup many types of databases thus making the system versatile and attractive to many types of users having a wide range of applications.

As per claim 28, Taylor '074 does not explicitly specify the type of database used in their system such as a database having one or more of the characteristics of columns, data types of columns, primary key and one or more indexes or database system having the characteristics of columns, data types of columns, primary key and one or more indexes in the system of Taylor would have been obvious to one of ordinary skill in the art in order to provide the capability to access and backup many types of databases thus making the system versatile and attractive to many types of users having a wide range of applications.

Prior Art

7. The prior art of record and not relied on upon is considered pertinent to applicant's disclosure. Falls et al. U.S. Patent No. 5,991,771 relates to the synchronization of transactions performed on separated disconnectable computers. Deshayes et al. U.S. Patent No. 6,047,294 relates to data storage for computers. Szalwinski U.S. Patent No. 6,078,933 relates to generally to data management. Szalwinski U.S. Patent No. 6,240,427 relates to generally to data management. Kodama U.S. Patent No. 6,374,262 relates to a relational database synchronization method. Taylor U.S. Patent No. 6,490,598 relates to more particularly towards physical backup and restore of databases residing in data storage systems.

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Contact Information

8. Any inquiry concerning this communication from examiner should be directed to Jean Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday through Friday from 7:30 A.M. to 6:00 P.M.

If any attempt to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Mr. BREENE JOHN E can be reached at (703) 305-9790. The FAX phone numbers for the Group 2100 Customer Service Center are: *After Final* (703) 746-7238, *Official* (703) 746-7239, and *Non-Official* (703) 746-7240. NOTE: Documents transmitted by facsimile will be entered as official documents on the file wrapper unless clearly marked "**DRAFT**".

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2100 Customer Service Center receptionist whose telephone numbers are (703) 306-5631, (703) 306-5632, (703) 306-5633.



Jean Bolte Fleurantin

2004-02-05